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**PATENT ABSTRACTS OF JAPAN**

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(71)Applicant : MATSUSHITA ELECTRIC IND CO  
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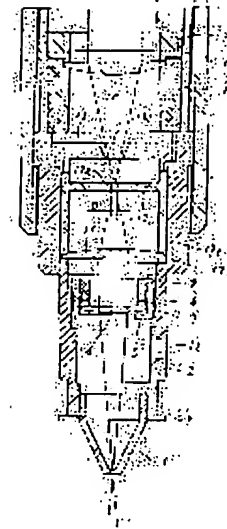
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(72)Inventor : KARASAKI HIDEHIKO

**(54) LASER BEAM MACHINE****(57)Abstract:**

**PURPOSE:** To improve the converging property of laser light and to improve the performance by providing the mode purifying mechanism having plural condensing lenses and a special filter between the condensing lenses from the output mirror of the inside of a laser oscillator.

**CONSTITUTION:** The laser light generated by a laser oscillator is once condensed by an upper part optical lens 10, its scattered light is absorbed by passing through the hole 13a of a clear aperture plate 13 at the front of a converging point and the multimode components of the laser light are absorbed by the special filter 12 arranged on the converging point. The laser light whose mode is purified is projected from the nozzle 1 by being condensed by a condensing lens 4 after being returned to parallel light once again by a lower part optical lens 11 and the laser light of the single mode only is utilized for working. Consequently the converging property of the laser light is improved, not only the working range is spread but also the cutting width is narrowed and the performance is improved.

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